TREES OF YOSEMITE

AND OF THE

SIERRA NEVADAS

ELINOR SHANE SMITH

This booklet will show you some of the trees, shrubs + etc. that you saw in Yosemite I am sorry it does not give a picture of the grizzly giant with the nine foot limb. Jane says my ancestors hung by their tails from this limb, centuries ago. Tom.

TREES OF YOSEMITE
AND OF THE
SIERRA NEVADAS

Illustrations by J. M. Culbertson
and by photographs.

by
Elinor Shane Smith

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FOREWORD

This little tree guide is not intended for botanists, but to enable the guest of a week, a day, to further enjoy the charm and beauty of Yosemite, or other Sierran beauty spots, by becoming familiar with the splendid trees. In the mountains **"tree"** and **"shrub"** are often interchangeable terms, as location and conditions dictate.

Yosemite, **4000 ft.** altitude on the valley floor, being best known, **is** chosen as a type of medium elevation **trees**, lower and higher elevation trees are also given.

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CONE-BEARING TREES IN YOSEMITE

***WESTERN YELLOW PINE—Pinus ponderosa. Key.** pines have slender **needles**, wrapped in a bundle at the base by a tough tissue: yel-low, 3 needles in bundle; "yellow," a longer word than "white," longer needles than white pine.
This is the common pine in Yosemite, a tall, stately, rather short **branched** tree, reaching 200 or more ft., 4 to 8 ft. **thick** living 300 to 500 yrs. in open park-like growths. The upper **branches** are ascending, the lower sweeping downward, in old trees, and **bark,** 3 to 4 in. thick, is a russet red, in large, irregular plates, from which vari-shaped scales, often amusing in form, are readily detached. The **cones,** 3 to 6 in. long, each thin scale prickle-tipped, are reddish brown when ripe, set in dense needle clusters near branch ends, the cone base usually remaining on the tree when the cone falls. The needles are a bright green, 4 to 12 in. long. John Muir: "When the wind sways the needles all one way ot a certain angle, every tree becomes a tower of white quivering sun-fire." "Were there no sugar pines these would be the kings of the world's (80 to 100) pines." There is a fine one opposite the 4-mile Glacier trail base; 4000 to 6000 is its zone for perfection. At higher planes; wide Sierran and Coastal range.

+**JEFFREY PINE—Pinus ponderosa var. jeffreyi,** takes its place at 6000 to 9000 ft. It is found with the western yellow pine in upper reaches of Little Yosemite; the **bark** is reddish or darker, in narrower plates; the **branches** much longer and heavier, the **cones**—larger, rounder, 6 to 12 in. long, the **leaves** in 3's—yel-low pine, longer leafed than white pines. Abundant about the Tahoe region and higher.

WESTERN YELLOW PINE
OLD AND YOUNG

***SUGAR PINE—Pinus lambertiana. Key,** s-u-g-a-r, w-h-i-t-e, five letters each, five needles in a bundle, "white" a shorter word than "yellow", shorter needles than yellow pine This splendid pine is best introduced by John Muir: "The sugar pine is king, surpassing all others, not merely in lordly beauty and majesty . . . its magnificent, outsweeping, feathery arms form a crown always bold and striking and exhilarating. Most beautiful of all pines, with a grace and lightness blended with strength and dignity." These royal trees grow 200 to 300 ft **tall,** and **live** from 500 to 800 yrs, growing to 10 or even 12 ft. **thick.** The great **cones,** the largest pine cones, 16 to 25 in. long and 6 in. in diameter, when open, are hazel brown, borne pendant on the tips of the wide spreading **branches,** swaying on their 1 to 2 in. long plump round **stems,** like great tassels in the wind, for they are light in weight, with thin flexible scales, and taper gracefully at each end. The **bark,** on old trees, is 2 to 3 in. thick reddish brown to brownish-purple, and wounds in it exude a **"sugar"**—sweet but medicinal The stately trunks are often bare 60 to 70 ft., with a very gradual taper, and the wood is of the best.

A few specimens are near Camp Curry; some in Little Yosemite, eastward, near the top of Yosemite Falls trail; the head of Nevada Falls to Glacier Pt. trail, upper Sentinel Dome, splendid groves about Crocker's, Wawona Rd. etc.—3000 to 7000, but best at 5000

SUGAR PINE
ASPENS, RIGHT AND LEFT

THE TAMARACK OR LODGEPOLE PINE—Pinus contorta, var. murrayana. **"T"** is the key—**t**-w-o, tiny, tamarack, **t**wo **t**iny stiff, stout **leaves,** 1 to 2 in long, in a bundle; **"T"** **t**iny **cones,** 1½ to 2½ in. long, reddish-brown, opening wide, the scales even recurving, so that a heap of them makes an excellent camp bed; **bark,** thin—seldom more than ¼ in., gray, with small ,thin, gray scales. The whole tree is very pitchy, exposing it to fire injury The **branches** are rather short and small, usually even, the lower trending downward, the upper ascending; it seldom grows more than 100 ft. high. In its snow-heaped young days every winter it is bent almost flat to the earth, to stand erect as the snow melts; the little trunks of a grove of saplings at, say 8000 ft., suggest the wavy line of a serpent undulating along the ground. Though the tree **lives** for 300 yrs. or more, sometimes reaches 150 ft. in **height,** attains a diameter of 3 to 4 or even 7 ft., this undulating effect, in these high altitudes, is always slightly evident, giving a curious muscular effect to the thin, gray-skinned trunk with bark, as though some scaly monster were imprisoned in a tree!

The tamarack pine is occasionally found along the Merced River in Yosemite, but it belongs in higher altitudes, from, say, 5000 to 10000 ft , and is at its best from 6000 to 8000 ft. in the Tallac region, for instance, and in places it forms great forests on the western Sierran slopes, and occasionally laps over onto the eastern slopes. It is also found on certain high coastal Mts. of southern California.

TAMARACK PINE

+**SILVER PINE—Pinus monticola. Key,** w-h-i-t-e, 5 letters, 5 **needles** in bundle; white, a shorter word than yellow, shorter needles than the yellow pine; the bright green **leaves** are 2 to 4 in. long. The silver pine seems a little sister to the sugar pine, similar but smaller needles and **cones,** the latter thin scaled and plump stemmed as the sugar pine's, but only 5 to 8 in. long and usually hung in clusters at the branch tips. The silver pine begins where the sugar pine is daunted by the weight of snow and intense cold, from 7000 ft. to timber line, though chance ones may be found as low as 5000 ft. and they thrive best at 8000 to 9000 ft. where they are beautiful, picturesque trees 100 to 150 ft. **high** and 3 to 6 ft. or more **thick,** giving the impression of sturdy strength and joy in their struggle with storms, which they combat for 500 or 600 years or more. The **bark** on young trees is grayish, of old trees a cinnamon red, or gray or even cream color, and is broken into small "alligator skin" checks. The silver pine is the dominant tree on higher Cloud's Rest trails.

***DOUGLAS SPRUCE, OR FIR—Pseudotsuga douglasii (taxifolia).** This is the chief timber of the northwest, where it grows in great somber-toned forests. In the Yosemite it is found on talus slopes on the shady side, and up to 5500 ft. It is a sturdy tree, 200 and more ft. high, 4 to 8 or more feet thick, with 3 or more inch thick gray-brown **bark,** deeply furrowed; rather short, heavy horizontal **branches,** drooping branchlets, well covered with single, dark, blue-green **needles,** ¾ to 1¼ in. long; **cones,** pointed oval, 2 to 4 in. long, each scale backed by a projecting 3-pointed bract, and hung from the branches, like a true spruce. Some fine trees in Yosemite on the road between Happy Isles and Mirror Lake; two 8 ft. trees at foot of Liberty Cap, near Nevada Falls; the Sierras, Shasta to Fresno Cos. Coastal

SILVER PINE

DOUGLAS SPRUCE

***SILVER FIR—Abies concolor,** is a tall, symetrical, slender spire of a tree attaining 200 ft or more, with quite short, fairly horizontal **branches** in regular whorls, branching and re-branching on to the small branchlets in flat, regular sprays, clothed with single flat **leaves,** ¾ to 3 in. long, these needles arranged in flat lateral ranks on twig sides, especially on the lower limbs, though there, as on higher branches, they are often erect. Tiny trees, branches sweeping the ground, taper to a cone-shape, inverted; as they grow older the **leaves** are often glaucous, or bloom covered. The **bark** of young trees is usually a lovely silvery white, gleaming through the spaced whorls of flat, horizontal branches like a slender pagoda of ivory and jade. As the silver fir grows older it is less lovely, for the **bark** becomes a dark ashy gray rough and furrowed, and the branches lose their symmetry. The **cones** are 2 to 5½ in. high, and nearly two in. thick; as with all firs, they stand erect on the branches, and fall away in scales, leaving the erect, spiky axis. In the Yosemite the silver fir is found in the Merced Canyon below Vernal Falls, on the shady south side of the valley, etc., though its zone is from 6000 to 9000 ft., flourishing in and above the Fallen Leaf region and similar altitudes, where it merges into the red fir zone higher up.

SILVER FIR

*INCENSE CEDAR—**Libocedrus, decurrens,** gains its name from the fragrance of its foliage and wood, and is one of Yosemite's most noticeable trees. Instead of needles it has tiny lapping, free-tipped scales for **leaves** as have the junipers. Its **branchlets**, fern-frond in form, are a warm golden green, close massed on young trees, forming a dense, inverted tree cone, tapering evenly and rapidly as does the trunk. In mid-winter they are in full bloom, the powdery masses of little stamen flowers so covering them that they resemble huge golden-rods! The green cone-flowers are not then noticeable, but at the end of the year the dainty, 3-parted **cones,** 1 in. long, bleeding-heart shaped, shining hazel brown, and pendant on the ferny spray-tips, are very attractive.

Old trees, 100 to 150 ft. high and 5 to 6 ft, **thick,** grow very ragged, and usually have several extra large, right-angled **branches,** ascending like little trees beside the trunk, and the crown is more or less storm-broken.

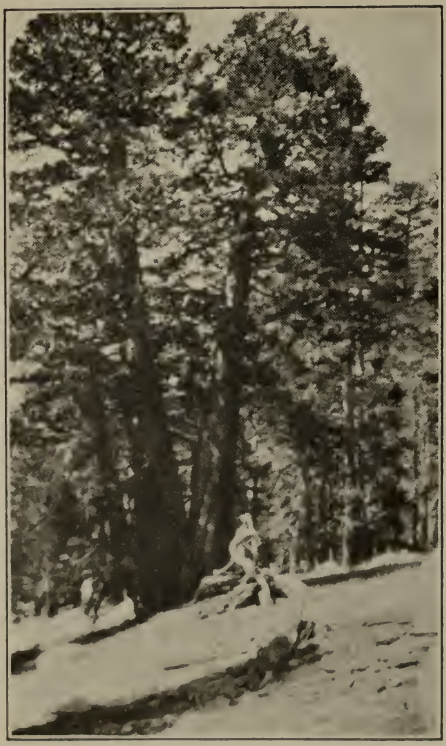
The **bark** of young trees easily tears into vertical ribbony strips, but on old ones is 2 or 3 in. thick, with vertical fissures in its cinnamon brown, shreddy, fibrous surface. Great slabs of bark are easily removed, and are used for wicky-ups by the Indians, cabin roofing by the whites.

Range, W. Sierran, some north-eastern from 2500 to 7000 ft. Coast Range etc. John Muir: "It would be delightful to be storm-bound beneath one of these noble, hospitable, inviting old trees, its broad sheltering arms bent down like a tent, incense rising from the fire made by its dry, fallen branches, and a hearty wind chattering overhead."

INCENSE CEDAR

***SIERRA OR WESTERN JUNIPER—Juniperus occidentalis.** The western juniper, like the incense cedar, has little overlapping scales for **leaves,** but those of the juniper are very tiny, gray-green, and "shingle" the little twigs very smoothly in several rows; but if you rub them the wrong way the free tips are harsh. Instead of **cones** they have little 1-3 in. blue-black **berries,** juicy with turpentine. The wood is fragrant and cedar-like, and the **trunks** are usually short, thick, sturdy, gnarled and contorted with a broad, wind-flattened crown, often only 10 to 20 ft., rarely 30, though sometimes in sheltered places, even 65 ft. high. It loves rocky, barren cliffs and revels in storms. Like the giant sequoia it lives to great **age.** Muir reckons that some of the gnarly, old giants—such as one on the trail up Mt. Tallac, 10 to 12 ft. thick and perhaps only 25 ft. high, are undoubtedly as much as 2000 yrs. old. The **bark** on these old trees is soft and thick, red-brown, firm, fibrous, and cut into wide, shallow furrows. The Sierra or Western juniper grows at from 6000 to 10,000 ft. on both sides of the Sierras; in Yosemite, about Glacier Pt., Nevada Falls, etc. On the higher southwestern Calif. Mts. it comes down and meets its larger leafed, smaller berried cousin, the **California juniper.** (See p.33)

John Muir: "A still hardier mountaineer is the Sierra juniper, growing on domes and ridges and glacier pavements—a picturesque sturdy, thick-set highlander. I wish I could live, like these junipers, on sunshine and snow, and stand beside them on the shores of Lake Tenaya a thousand years!"



SIERRA OR WESTERN JUNIPER

1. (A). SHADE AND MOISTURE LOVERS OF YOSEMITE

***CALIFORNIA NUTMEG—Torreya californica.** Nearest the conifers is the nutmeg—"that strange tree with the flat, shining, sharply pointed **leaves,**" from 1½ to 2½ in. long, arranged in flat, lateral rows. They are dark green, narrow, with a heavy midrib, rigid, shaped like a tiny Roman short-sword. The **branches** and trunk have smoothish **bark** the trunk, dark, soft, with finely checked seams; the branchlets droop, the **fruit** is long olive-shape, the kernel resembles a nutmeg, hence the name. It is a handsome, small tree, 30 to 80 ft, and ½ to 2 ft thick, often with a twisted trunk and seldom grows at higher altitude than about 4000 ft. The finest group of them in Yosemite is near Cascade Falls, and single trees are scattered along the Merced Canyon from El Portal, up. Occasional, W. Sierras.

1. (b) BROAD LEAFED TREES IN YOSEMITE

***NUTTALL DOGWOOD—Cornus nuttallii**—also loves cool, damp canyons, and in Yosemite is a small, erect, smooth-**barked** tree. Its **leaves** are a pointed oval, 3 to 5 in. long. The small, tubular **flowers** are crowded into a dense head, surrounded by great white flower **bracts**, blooming in late May; in upper Yosemite Canyons, on Sierran slopes and northward. John Muir: "The flowering dogwood is brighter still in these (autumn) days, for every branch of its broad leaves is then a brilliant crimson flame. In the spring, when the streams are in flood, it is the whitest of trees, white as a snow-bank, with its magnificent flowers four to eight inches across." (See p. 40)

CALIFORNIA NUTMEG

NUTTALL DOGWOOD

*MAPLES. There are two kinds of maple in Yosemite, one, a dwarf tree.

1. **BIG LEAF, OR OREGON MAPLE—Acer macrophyllum,** growing from low levels up to 5500 ft., a round-headed tree, with large, smoothish **leaves,** 4 to 12 in. across, deeply cut into five broad, somewhat toothed sections or lobes, and stems 2 or 3 in. long; drooping racemens of greenish yellow **flowers** are followed by bristly-haired, winged **seeds,** in joined pairs, resembling a large tan-colored fly. The **bark** is smooth and green when young, rough and gray later, when on a fine, broad and low tree. John Muir: "It (in mts.) is usually found in the coolest, boulder-choked canyons where the streams are gray and white with foam over which it spreads its branches in beautiful arches from bank to bank, forming leafy tunnels of soft green light and spray—favorite haunts of the water ousel. "In autumn it is a gorgeous mass of clear, pale yellow.

*2. **THE SIERRA OR DWARF MAPLE—Acer glabrum,** commonly a shrub, but sometimes attaining a slender treehood, even to 30 ft. It has thin, small, 3 to 5 roundish-lobed, sharply-toothed **leaves,** 1 to 3 in. across, on stems 1 to 2½ in. long. **Flowers** are deep red, **seeds** smooth and winged. Autumn turns it to splendid bursts of color; it is found the length of the Sierra Nevada pine belt up to 6800 ft.; nice ones are on the Glacier Point short trail

—**MAPLE (box elder)—Acer negundo, var. californicum**—20 to 60 ft., 3 leafletted 5 in. leaves, rounded-toothed. Stamen flowers clustered on long thread-like, downy stems. Seed flowers in slender racemes; winged seeds crimson downy, then straw-white. Along streams, ets. Sierran foothills, coastal.

BIG LEAF MAPLE

SIERRA OR DWARF MAPLE

***COTTONWOOD, BLACK—Populus trichocarpa.** Along the main streams are found tall, stately, round-headed, often bare-trunked cottonwoods, the **bark** of younger trees whitish and smooth, of old ones, vertically fissured. The long-stemmed, 2 to 5 in. **leaves** are long-pointed ,broad, almost heart-shaped at base, have fine saw-tooth edges, are dark green above, whitish or brownish below, and turn a fine pale gold in Autumn. The stamen catkins grow on one tree, the seed catkins on another, and when the latter are ripe, the fluffed, cotton **seeds** fly far and near, and are popular nest-lining for birds. The black cottonwood is found here and there as high as 8000 ft., attains a height of 200 ft. and a diameter of 6 to 8 ft

***WHITE ALDER—Alnus rhombifolia,** is another water-loving tree, preferring to stand with its feet in the very edge of the stream, and it lines the banks in erect, graceful, round topped groups, from 30 to 80 ft. high. It has smooth, white-blotched, pale olive **bark** and heavily veined, notch-edged, somewhat sticky and pleasant-odored dark green oval **leaves**, 2 to 4 in. long. During the winter when the alder is bare of leaves, its long, slender, golden-brown stamen catkins cover the tree like a golden rain. The little green seed flowers on the twig close by, insignificant now, by fall have become clusters of dainty, dark, brown, woody **cones.** Alders are short lived trees, as are most water-lovers. The white alder seldom is found above 5000 ft. (See mountain alder, p. 37)

BLACK COTTONWOOD

WHITE ALDER

WILLOWS—YOSEMITE AND SIERRA NEVADAN

Several trees and more shrub forms grow in Yosemite, and with many others, at lower and higher altitudes, in the Sierras. There is much confusion as to names, and species vary greatly as to altitude; for these reasons species will be grouped together.

***ARROYA WILLOW—Salix lasiolepis**, has rather short, broadish **leaves**—1½ to 4 in. long, green above and silky white below; in rounded **clumps** of long **branches**, along Yosemite meadows and streams—Mirror Lake, etc. 1-yr. old "wands" are deep red-brown.

***NUTTALL WILLOW—S. scouleriana,** is an erect, occasional tree, with short—1 or 2 in.—broad, round-tipped **leaves**, light, shining green above, paler green or silky below. In Spring its **"pussy-willows"** are charming. Year-old **twigs** are clear red-yellow, later, deep reddish-brown.

***VELVET OR SILKY WILLOW—S. sitchensis,** is found, in a narrow-leafed form, at Stoneman Bridge, Happy Isles, Nevada Falls, etc., and as a small shrub, at high Sierran alt. The **leaves** are short, pointed at both ends, white velvety beneath; vars. Mere naming will suffice for some other Sierran willows, not taking space for forms solely shrubby.

—YELLOW WILLOW—S. lasiandra to 4500 ft.

—BLACK WILLOW—S. nigra

***LONG-LEAF WILLOW—S. longifolia.**

—SAND-BAR WILLOW—S. sessifolia

***YOSEMITE LONG-LEAF—S. bolanderiana.**

COYOTE WILLOW—S. argophylla E. S. N.

+SILVER WILLOW—S. geyeriana— or, **argentea**

NARROW LEAF—S. exigua—E. S. N.

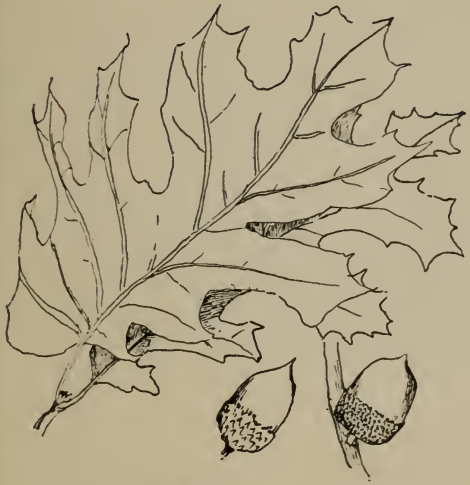
WILLOWS

YELLOW NUTTALL ARROYO

BROAD-LEAF, USUALLY OPEN VALLEY DWELLERS OF YOSEMITE

***BLACK OAK—Quercus kelloggii (or californica,)** is the oak whose graceful, stately, upward-reaching or picturesquely spreading **branches**, clothed with large 3 to 8 in. long, richly shining green **leaves**, with sharp-tipped, broad lobes gladden the eye everywhere on the floor of the Valley, and reaches perhaps its greatest perfection on the trail above Mirror Lake. Its **bark** is blackish, hence the name; its blunt **acorns** are an inch or more long, deeply set in cups ½ to 1 in. long, and were greatly prized by the Indians, forming an important food. As the leaves unfold in the Spring they are plushy and soft, and every shade of pink, vermillion, crimson; in the Autumn, either a rich russet brown or frost-painted to deep, rich reds. The Black oak grows from 1500 up to 8000 ft. elevation.

***WESTERN CHOKE-CHERRY—Prunus demissa,** is here a small graceful tree or a shrub, though it often reaches **30 ft.** or higher. Laden with gay, deep red cherries in August, it bends in a veritable fountain of leafy **branches** thick-set with beautiful **fruits**—a truly charming sight. The **leaves** are a rather broad elliptic, more pointed at the tip than base, finely toothed on the edges and 2 to 3 in. long. It is more frequently found in the open meadows in thickets near the streams.—Sierra Nevadas, 2500 to 7500 ft



BLACK OAK

WESTERN CHOKE-CHERRY

BROAD-LEAFED TALUS-SLOPE-LOVERS OF YOSEMITE

***CALIFORNIA BAY OR LAUREL—Umbellularia californica** is a handsome, ever-green, broad-leafed tree, growing to large size lower down in rich soil, but on the rocky talus slopes and in the canyons of Yosemite it is apt to be a small spire-shaped tree, covered with rich green, rather narrow, oval **leaves**, 3 to 5 in. long, smooth edged, with much the odor of bay rum. The dense-clustered **flowers** are small, greenish-yellow, followed by purple-black, short olive-shaped **fruits**—anything but edible! The California bay is closely allied to the classic Greek bay or laurel—laurus nobilis. From north Sierras to Kaweah R. Coastal.

***GOLDCUP OAK—Quercus chrysolepis,** one of the two tree oaks in Yosemite, is one of the most beautiful live oaks, growing mostly on talus slopes and rocky canyon sides. Old trees have a wealth of drooping **branchlets**, with small, pointed-oval shining **leaves**, mostly smooth-edged, though young twigs and old ones as well, are often very prickly as to edge. Underneath the leaves are dull gold and the thick **acorn-cups** are powdered with a golden fuzz, hence its name. It lives to great **age** and sometimes the short, many-branching trunk reaches 7 or 8 ft. in diameter, the round dome of the head as wide or wider than the 60 ft. or so of height. There are some fine specimens far up Tenaya Canyon, and Muir tells of a giant—"the largest of any oak in California" far up Indian Canyon. Wide range.

CALIFORNIA BAY OR LAUREL

GOLDCUP OAK

THERE ARE TWO TREE MAHOGANIES IN THE SIERRAS

***MOUNTAIN MAHOGANY—Cercocarpus parvifolius**, is a talus-slope lover, though seldom seen in the Valley—abundant in the Western Sierras. The narrow-leafed form, **Cercocarpus ledifolius,** takes its place on the eastern slopes; both are rangy, sprawling shrubs or small trees 20 or even to 40 ft., with small, inconspicuous **flowers**, and most conspicuous **"seed-tails"**—twisted plumes, 2 in. or more long. The wood is very hard, fine and beautiful, the **bark** thin and gray. The latter loves high, arid places.

***CHESTNUT OAK—Pasania densiflora**—John Muir gives, "found here and there by the botanist in Yosemite Canyons"—an erect evergreen with leathery, chestnut-shaped leaves and bearing large, fuzzy, blunt acorns with mossy cups, and long densely flowered stamen catkins. Chiefly coastal.

TREES ON ENTRANCE ROADS, ETC., BUT OUTSIDE YOSEMITE

There are 2 **Ashes** in the El Portal region, and elsewhere in N. W. Sierran foothills:

—1. OREGON ASH—Fraxinus oregona, is a fair-sized tree, with dark green compound **leaves** 6 to 12 in. long, made up of 5 to 7 oval leaflets 2 to 5 in. long. The **branchlets** are sturdy and thick, and the dense clusters of non-petaled **flowers** are followed by thick bunches of **seeds**, set about below the seed and at its sides, by a long thin wing.

—2. FLOWERING ASH—Fraxinus dipetala, is a small round-headed tree, charming when in bloom, its every **blossom** of the large loose cluster bearing two dainty white petals. The compound **leaves** are 3 to 6 in. long, have 3 to 9 leaflets, 1 or 2 in. long

MOUNTAIN MAHOGANY

OREGON ASH

—**CALIFORNIA BUCKEYE—Aesculus californica,** cousin of the horse-chestnuts, is also in western Sierra foothill canyons, as far south as Tejon Pass.

It is a low, spreading, pale gray **barked**, decidious tree, **branching** almost or quite from the ground and covered very early—often the first in the Spring—with a luxuriance of light green **leaves** consisting of 5 (or 7) tooth-edged, pointed leaflets 3 to 5 in. long, springing from the end of the stout stem. Later tall, airy "candles" 6 or 8 in. high, of small, creamy-yellow-throated **flowers**, stand on the branch ends, to be followed by large, pear-shaped **fruits**, containing 1 to 3 shining, chestnut-brown nuts, which the Indians knew how to make palatable The leaves droop and drop often by late July, leaving a white, seamless pattern of branches among the dark evergreens Near Yosemite they grow at El Portal, Merced Canyon. A wide coast range.

—**MOREHUS OAK—Quercus morehus**, is another El Portal region tree and from Eldorado Co. to Tulare Co in the W. Sierras—a small, round-topped, deciduous tree which is considered a hybrid between the evergreen **Wislizenii** oak and the deciduous **black oak** Its **leaves** are rather oblong in outline, 2 to 4 in. long, with sharp, shallow lobes, bending toward the leaf-tip, and turn a charming yellow in the fall The **acorns** are pointed, in deep cups

CALIFORNIA BUCKEYE

MOREHUS OAK

—**INTERIOR LIVE OAK—Quercus wislizenii.** Along the upper foothill roads to Yosemite, in Merced Canyon and elsewhere in W. Sierras, 2000 to 4000 ft., is found this pleasing, small, rounded, evergreen oak with drooping **branchlets**, gleaming, dark green, leathery **leaves**, 1 to 2½ in. long, the most of them pointed-oval ones. The **bark** is dark and smooth, except on very old trees. The **acorns** are reddish-brown, 1 to 1½ in. long.

—**BLUE OAK—Quercus douglasii and SABINE OR DIGGER PINE** are much together along entrance roads to Yosemite, for many miles. The blue oaks—40 to 75 ft.—have broad, rather open heads, many **branched**, rather airily clothed with small—1 to 2 in.— slightly lobed or smooth edged, thinnish, blue-green leaves— hence the name. The **bark** is finely furrowed and checked; trunks rather slender, **acorns** broadly oval, with thin, shallow cups, Sierras to 4500 ft., Shasta to Mohave. Coastal.

—**SABINE OR "DIGGER" PINE—Pinus sabiniana**—an **open-branched**, often trunk-divided tree—to 60 ft.—with blue oaks; loving hot hillsides. Its gray-green needles—6 to 12 in.—in 3's, are drooping and so sparse that one can see through the tree. The long-stemmed, heavy **cones**—6 to 10 in. and 3 to 5 lbs.—are oval, each scale tipped with a strong, recurved "claw" and yield thick-shelled, excellent nuts; **bark**, dark reddish-brown, ridged and scaly. Found on both sides of Sierras, in foothills, to 4000 ft.

—**KNOB-CONE PINE—Pinus attenuata or tuberculata**—a small, slender 3-needled pine with hard, closed, pointed **cones** that fire alone opens. In the Sierras, on a few N. W. slopes—as on Auburn Rd.—in limited areas, 1500 to 4000 ft., and coastal mts.

INTERIOR LIVE OAK

BLUE OAK

FIVE WESTERN SIERRAN FOOTHILL TREES

—**VALLEY WHITE OAK—Quercus lobata,** a splendid, ascending,-**branched**, drooping branch-letted tree, with handsome deeply cut and rounded-lobed leaves, gray **bark**, fissured and checked, and large pointed **acorns**; grows to 75 or more ft. high, 6 to 8 ft. thick, and to a Sierran elevation of 3000 ft. Coastal Valleys.

—**SYCAMORE, CALIFORNIA—Platanus racemosa,** a beautiful, gracefully irregular, white-blotched **barked** tree, to 75 ft., found on stream banks, handsome, maple-like **leaves**, fuzzy brownish beneath, and 3 to 7 balls of flowers, then **fruits**, pendant on a tough stem. In N. W. Sierran canyons to 2000 ft., and coastal.

—**JUNIPER, CALIFORNIA—Juniperus californica,** is found ,besides in coastal mts , northward on W. Sierran slopes to the region of Kernville. It grows to 40 ft., though usually with contorted **trunk** and **branches**; the **bark** is thin, ashy gray and scaling; **leaves** tiny, lapping, greenish-yellow scales; **berries** reddish-brown, dry, sweet, edible, ripening the second season (See p. 13)

—**MADRONE—Arbutus menziesii,** is a handsome evergreen to 125 ft. of irregular shape, broad, shining, oval, smooth-edged **leaves** from 4 to 7 in. long; **bark** smooth, scaling off each year, paper-thin, pale olive at first and burning to deep Indian red. It bears lovely clusters of white, closed-bell **flowers**, then red **berries**. Middle W. Sierras from 2000 to 4000 ft. Tuolumne Co. to Shasta Co. Coastal.

—**COTTONWOOD, Fremont—Populus fremontii.** A tree marking streams; **leaves** shiny, smooth, leathery, round-scalloped, heart-shaped and long-stemmed. **Tree** commonly 50 to 75 ft., round-topped. Yellow in Fall. Sierra Nevada foothills, coastal, etc.

SOME CONIFERS THRIVING ONLY AT HIGHER ALTITUDE THAN YOSEMITE

+**BIG TREE OR GIANT SEQUOIA—Sequoia gigantea,** is limited to certain groves in the Sierra Nevadas, at elevations of 5000 to 8000 ft. On Yosemite roads the Mariposa grove, near Wawona; the small Tuolumne grove, on the Big Oak Flat Rd. and the Merced grove, on the Coulterville Rd. The Giant **sequoia** it the king of trees, the largest, grandest tree in the world. It sometimes reaches the great height of 325 ft. and a diameter at the base of 35 ft Aged trees are bare of branches for as much as 100 ft., and have, here and there, immense limbs growing erect from right-angled beginnings.

The **crowns** of these ancients,—Muir says they are undoubtedly as much as 4000 yrs old—are storm-broken by the centuries, but the immense, stately columns of their deeply ridged, red-brown trunks are unstirred. The thick, fibrous **bark** sometimes becomes 2 ft thick, and is fortunately somewhat fireproof. Young trees, in the open, are inverted-cone shaped, the leaves are small—½ in. or less—are awl-shaped, adhering to the twig except the free-pointed tip; the little **cones**—2 to 3 in. long—are oval, without scales, the segments drawing apart in drying. These stately giants have their name from a Cherokee Indian, who invented an alphabet for his tribe.

+**FOXTAIL PINE—Pinus balfouriana** —a w-h-i-t-e, 5-needled—pine growing 40 to 50 ft at or near the timber line in S. Sierras and Shasta region, to 3 or 4 ft. **thick**, with sturdy, spreading **branches**, the ends of which are densely covered with tufts of 1 in. long, curved, dark green **needles**—hence, "foxtail." **Cones** 3 to 4 in. long, on branch tips; **bark** on young trees white; old, in rich brown, broad, flat ridges.

+**WHITE BARK PINE—Pinus albicaulis,** another w-h-i-t-e, 5-needle pine; flourishes near W. Sierran timberline, where deep snow and fierce winds combine to make it a stunted tree, white **barked**, rarely 35 ft, high—oftener a wind-torn fringe of long contorted **branches** bearing amid dense tufts of bright, dark green, 1½ to 2½ in. **needles**, deep purple, thick scaled **cones**, brown when ripe—birds and squirrels seldom allow this!—on thick, very pliable **twigs**

+**LIMBER PINE—Pinus flexilis,** another w-h-i-t-e, 5-needle pine, growing 25 to 50 ft high, its long **branches**, with their thick tufts of yellow-green, curved, 1 to 3 in. **needles** sometimes sweeping the ground. The deeply checked dark brown **bark** distinguishes it from **albicaulis**, as do its stemless, larger—3 to 8 in.—**cones** with wide, thick-tipped scales. The whitish **twigs** can be tied in **bowknots** without injury. 8000 to 12,000 ft., rare; a few at Mono Pass, scatteringly southward, and on high S. Cal mts.

+**PINON, OR 1-LEAF NUT PINE—Pinus monophylla,** a small, round-headed pine 15 to 20 ft. high, with dark brown **bark**, 1-in single, gray-green **needles**, each with its bundle-wrapper; the only Am 1-leaf pine. **Cones**, almost round, 1½ to 3 in. long; large, wingless nuts, oily and delicious—"Indian orchards"; on high E Sierran desert slopes, and similar locations

+**BRISTLE-CONE PINE—Pinus aristata;** said to be "sprinkled on desert E. Sierras," near timberline; a small w-h-i-t-e pine, **5-needles**, 1 in long; heavy **branches**; 3 in., chunky, dark red-brown **cones**, set with ½ in. incurved prickles.

+**RED FIR—Abies magnifica,** the largest fir in the world, thrives from 6000 to 9000 ft, blending, on its lower range, with the **silver fir**. It has geometrically branching-**limbs**, thick, dusky purple, deeply furrowed **bark**, short, plushily dense, erect, stiff **needles**, and 3 to 5 in high and 2 in. thick, pitchy, erect **cones** on the ends of **branches**; and is truly "magnificent" —the height 250 to 300 or more ft., diameter to 8 or 9 ft. **Cones** break, as all firs, as they open, **seeds** and flat scales falling, the erect axis remaining spikily up. **var. shastensis**, similar, but cones almost covered with down-lapping scale-bracts; Sierra Nevada, N to Mt Shasta

+**MOUNTAIN HEMLOCK—Tsuga mertensiana,** is the most graceful of all the mt trees and grows from 7000 to 10,000 ft. from end to end of the Sierras. The short, drooping branches of young trees, softly covered with tiny and tufted **needles**, become, on sheltered trees, 75 to 100 ft. high, graciously spreading, tips hung with lovely purple young **cones** ¾ to 2 in. long. Muir: ". . .the pistillate **flowers** are a dark rich purple, almost translucent, the staminate blue—a vivid, pure tone of blue, like the mountain sky—"

HIGH ALTITUDE BROAD-LEAFED TREES

+**QUAKING ASPEN—Populus tremuloides,** is the alpine cousin of the cottonwood—a graceful tree with fluttering, shining, light green **leaves,** roundish, sharp tipped, long stemed, which turn a lovely pale gold in autumn. The bark is greenish white when young, darker with age. Aspens love streams and moist slopes, seldom come so low as 4500 ft. and thrive at 10,000 or more. It has the widest range of any American tree—arctics to Mexico. Near Yosemite, lovely groves, and on the upper reaches of Yosemite Cr.

Another broad leafed alpine tree is the **BLACK BIRCH—Betula fontanalis,** found on the N. E. slopes of the Sierras, a tree 35 to 40 ft. high, with slender, graceful, pendulous **branches,** with a broad, open, airy **head**; **branchlets** at first green and rough, then dark orange, then ing tree with reddish-brown **bark,** typical alder **leaves,** but very coarse toothed, these finely dingy white, clustered; then tiny, red, very bitter **fruits,** wide range.

+**MOUNTAIN ALDER—Alnus tenuifolia,** 6000 to 7000 ft.—is a small, low and long-branching tree with reddish-brown **bark,** typical alder **leaves,** but very course toothed, these finely toothed.

A GROUP OF SMALL SIERRAN TREES—SEMI-SHRUBS—MOST, OF USE TO INDIANS FOR FOOD

*BITTER CHERRY—**Prunus emarginata,** in favoring places a tree to 40 ft.—here a shrub or small, slender tree, **branches** slender, a shining brown; **leaves** small, blunt tipped, **flowers**, dingy white, clustered, then tiny, red, very bitter **fruits**; wide range.

—BUTTON WILLOW—**Cephalanthus occidentalis,** 6 to 30 ft., gray **bark**, large thin, broadly ellipic, pointed **leaves**, sycamore-like balls of **flowers**, then seeds. Occasional along streams in Sierran foothills.

—BUCKTHORN, EVERGREEN—**Rhamnus crocea, var. ilicifolia,** a small, stout-**twigged** spiny, leathery-**leafed** tree ,or shrub with red **berries**, found in Sierran foothills and coastal mts.

—2 ELDER BERRIES, **Sambucus velutina,** a small, tree, the downy-**leafed** elder, with toothed, compound leaves, large, flat, creamy **flower**-clusters and blue-black **berries**—Plumas Co. Sierras; and **Sambucus glauca**, similar but with perfectly smooth **leaves**; W. Sierra foothills.

—FREMONTIA—**Fremontia californica,** a shrub or tree to 20 ft., with spreading, open **crown**, dark, roughly seamed **bark**; under side of ivy-shaped **leaves** and young **twigs** covered with rusty "down"; saucer-shaped **flowers**, to 2in. wide, a vivid waxen yellow. Grows largest in Sierran foothills. Mariposa to Kern Cos., and Coastal.

—**HOP TREE—Ptelea baldwinii,** a small tree with compound, 3-leafletted, long-stemmed **leaves**, tiny **flowers**, then thin, straw-colored **seeds** with hop-like wings about them; Sierran foothills from Tehama to Calaveras Cos.

—**RED BUD--Cercis occidentalis,** a small, round tree, to 20 ft., with reddish-purple, pea-shaped **flowers**, literally covering the trees before the large, roundish **leaves** followed by broad purple **pods**. W. Sierran foothills, Shasta to Tulare Cos. Coastal.

+**SERVICE BERRY—Amelanchier alnifolia,** slender shrub or small tree to 30 ft. (Sud.)—with small, thin, blunt notch-ended, blue-green **leaves**, pretty, narrow, 5-twisted-petalled white **flowers** and small, blue-black **fruits**, edible; Sierran, 5000 to 8000 ft.

***SIERRA PLUMS—Prunus subcordata,** is a W. Sierran shrub or small tree to 20 ft., with crooked, green-barked, spiny **branches**, small, roundish, finely-toothed elliptic **leaves**, white **flowers** ½ in. wide, in clusters, followed by 1 inch red **fruits**, usually small and dry in lower Yosemite, but large and good in northern Sierras; var **kelloggii**, yellow, larger, sweeter. Sierra Co. to Shasta.

—**TOYON—Heteromeles arbutifolia,** rarely a small tree, with large, pointed-oval, leathery, sharp-toothed **leaves** large, flattish clusters of tiny creamy **flowers**, followed by scarlet "Christmas **berries**"; Sierran foothills, Butte to Mariposa Cos. Coastal.

—**WESTERN YEW—Taxus brevifolia**, is sometimes found in Merced Canyon, and sprinkled through the Sierras; it has fine, hemlock-like **foliage** and in September the seed-bearing trees —up to 30 ft. high, are covered with small scarlet **berries**, the brown pits showing at the tips.

—**CYPRESS, MACNAB'S—Cupressus macnabiana,** is a bushy little tree 30 to 40 ft. high, with blue-green, tiny-scaled **foliage**, small round horned **cones**; N. Sierran foothills to Yuba Co

—**BLADDER-NUT, SIERRA—Staphylea bolanderi,** a shrub or small tree, to 20 ft. Opposite, 3-leafleted **leaves**, drooping clusters of white **flowers** at **branch** tips; bladdery, 3-celled, 3-horned pods; rare. Sierra Nevada foothills from 2000 to 4500, Tulare to Siskiyou Co

—**BUFFALO BERRY—Shepherdia argentea**, a stout, spiny shrub or small tree; thorns rigid, leafy at base; **leaves** silvery, scurfy below, greener above. **Berries** red. Mono and Alpine Cos

—**DOGWOOD, DWARF—Cornus sessilis.** Clumpy shrubs or small trees, **flowers**, yellowish; 4 falling bracts beneath; **fruits** ripening to purple-black. Sierra Nevada from Amador to Tehama Cos., 1800 to 3500 ft. (See p. 15)

Several other local, shrubby trees are found, as **HACKBERRY—Celtis mississippiensis, var. reticulata,** broad, 30 ft., small **flowered**, blue **berried** tree, Caliente Cr. Kern Co., etc or those out of the strict range, as Engelmann spruce, near Shasta, etc.